SHOES & WRIST STRAP TESTER

EUROSTAT WST100 (Ref : 61-200-0100)

EUROSTAT WST100 shoes and wrist strap tester, is designed for checking the conformity of operators wrist strap and / or shoes to the ESD protection standard

EUROSTAT WST100 works with battery that can be supplemented with an A/C net adaptor

Tolerances and relevant calibrations can be easily changed by customers according to their specific needs.

EUROSTAT WST-100 tester offers accurate solution at attractive price

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1. Description

1.1. The tester

The tester is a pocket device including a plastic box dims : 150 mm x 88 mm with complete integrated electronic system. The display includes 7 leds .

1 green led : When test is conform, the green led switches on.

6 red leds : When values are not in conformity :
For the wrist strap (the value is under or above standard value)
For the right shoe (the value is under or above standard value)
For the left shoe (the value is under or above standard value)

Sound signal as well as a vibror are integrated in the tester.
The tester includes a 60V/2A integrated relay. For adjustement of this relay, please see chapter 11. (For example, to connect an alarm in case of non conformity of the measure or to connect an automatic open door system when value is conform).

The tester works with 4 AA type batteries. These batteries can make 100 measures a day, 5 days a week during 1 year. It can also be used with a plug power supply (see chapter 10)

1.2 Shoe electrode

Shoe electrode consists on a 430mm x 500 mm plastic sheet with 2 electrodes inside : one electrode for left shoe and one for the right one made out of slip resistant grooved aluminium material.

When kit is switched on, power supply is connected to the tester through the electrode. The electric cable connecting the tester to the shoe electrode supplies the test device.

2. Technical data

Dimensions :	Tester :	around 150 mm x 88 mm x 35 mm
	Electrode :	around 430mm x 500mm x 10mm (L x l x H)
Weight :	Tester :	around 250 g
	Electrode :	around 700 g
Power supply :	4 x AA batteries	
Display :	1 green LED (8mm), 6 red LED (5mm), 1 vibror	
Relay connection :	Solenoid valve 60V/2A	
Measurement :	Voltage measurement process	
Voltage :	20V +/- 5%	
Connection :	All connection by female stud, 9 plots Sub-D	
Tolerances :	Separately adjustement of tolerances for the wrist strap and for the shoes Lower limit : From 0 to 2 Mohm Upper limit : From 2 to 200 Mohm Other resistance limits possible on request	

3. Operating instructions

Stand on the applied shoe electrode with 2 feet.

The wrist strap connection cable must be plugged in.

Push with your finger on the test plate and keep pushing until results are displayed

At the beginning of measurement, you can hear a signal. Tester measures first the resistance of the wrist strap, secondly the resistance of the left shoe and thirdly the right one.

At the beginning of the test, you will hear a signal. Tester is measuring the resistance of the wrist strap and then resistance of left and right shoe.

When results are within the limits, you will hear a signal and the green LED flashes.

If one of more results are lower or upper the limits, the relevant red LED will flash. Several red LEDS can flash simultaneously. (for example : "**wrist strap**" and "**left shoe**"

Results are displayed for 2 seconds before the tester automatically switched off.

With « Set-up » selection, your can install the following functions (please see chapter 11)

Control function :

- Tests only the wrist strap (not the shoes)
- Tests only the shoe with separated electrode
- Tests the wrist strap and the shoes with separated electrode (default)
- Tests the wrist strap and the shoes with common electrode

Relay function :

- Alarm (works when default)
- Electrical lock (works when OK) (default)

4. Datas memory

The tester has 5 statistics memory :

- Quantity
- Wrist strap <
- Wrist strap >
- Shoe <
- Shoe >

which operated as follows :
After each measurement, incrementation value is 1.
When the default <or > is detected , the default counter < or > increases by 1.
That's valid for each memory. Consequently, all wrist straps and shoes tests are recorded

5. Tolerances

Low and high reference resistances determine upper and lower limits.
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For plant installations :	Wrist strap	Lower limit :	750 kΩ
		Upper limit :	35 MΩ

Shoe :	Lower limit :	750 kΩ
	Upper limit :	35 MΩ

Other tolerances value are possible by changing the limit values with a key calibrated according to your needs. Tolerance can be adjusted at all time by the customer. (please see chapter 11)

6. Results interpretation

Lower limit :	Calibration value (low limit)	➔	LED <
	Calibration value (low limit) + 10%	➔	LED ok
Upper limit :	Calibration limit (High limit) - 10 %	➔	LED ok
	Calibration limit (High limit) + 10 %	➔	LED >

7. Changing the batteries

A battery control device is including in the tester. When battery is low, you will hear a signal. Then, batteries must be changed or loaded.

Batteries are located under the tester.

When batteries are flat, the tester switches off automatically and batteries must be changed

When changing the batteries, take care of the polarity position .

8. Electrical plugging

Connection of the tester with a 9 pins Sub-D female plug on which shoe electrode is connecting with optional supply, relay and PC interface.

Only one connection per cable on mobile monitor.

The tester is plugged to supply area through shoe electrode.

9. 9 pins plug data

1 = AC/DC + Loading
2 = PC Out
3 = PC In
4 = Left shoe electrode
5 = Ground (Tension-charge appareil)
6 = + Measurement voltage 20 V
7 = Relay (ground)
8 = Wrist strap
9 = Right shoe electrode (or common electrode if applicable)

The charger and relay contact are connected together with shoes in-put on shoe electrode.
For Interface PC utilisation, plug in jack must be connected to shoe electrode and PC cable.

ATTENTION ! use only special PC cables delivered with the tester !

10. Options

Calibration kit
Reference resistors for upper and lower limits with plant certificate of calibration .
Ref : 61-200-0101 for 750KΩ / 35 MΩ values
Ref : 61-200-0102 for 750KΩ / 10 MΩ values

Current supply

Set consisting on 4 NiMh loading batteries and a transformer (plug in jack) to be connected on electrode plate.

Ref : 61-200-0103

Instructions wall plate

French language : Ref : 61-200-0104

English language : Ref : 61-200-0105

German language : Ref : 61-200-0106

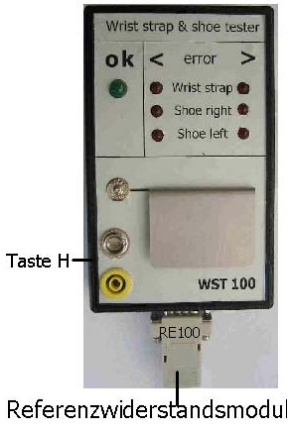
PC Interface

consists on PC cable and 3.5 '' diskette for export and cancellation of statistic memories.

Windows and Excel programs are necessary

Ref : 61-200-0107

11. Operating instructions



2 reference resistances are necessary for wrist strap and shoes testing functions.

11.1 Instructions :

- Long press on the pinhole located on the left side of the tester
- Push the test plate ➔ sound signal !
- Release the pressure on the pinhole

Set-Up mode ➔ User mode :

- By pushing the test plate, user mode has changed, that means :

1. All leds are red ➔ Wrist strap + left and right shoes on test process
2. Wrist strap LED (<>) ➔ Only wrist strap on test process
3. Wrist strap + right shoe LED (<>) ➔ Wrist strap + right shoe on test process
4. Right and left shoes LED (<>) ➔ Left and right shoes on test process (without wrist strap)

- By short pressing on H , you can continue the process and enter new parameters
- You can change the relay mode by pressing the test plate .

1. All leds are green ➔ Relay on electric lock
2. All leds are red ➔ Relay on alarm function

- By short pressing on taste H button, you can continue the process and enter new parameters.
- You hear the vibror during 1 second, then all Leds flash
- By pressing on control plate (> 1 sec) the mode set-up is on process
- By short pressing on taste H button, you can go on with set up mode

Set-up mode ➔ Reading resistance references :

- Wrist strap LED < flashes (only for wrist strap test)
- Close the resistance module for wrist straps and press shortly on tasteH button
- When value is OK , green led flashes (+ sonor signal) during 1 second, and wrist strap LED flashes > .
- Push quickly on taste H button
- When value is OK, green led flashes (+ sonor signal) during 1 second.
- Right shoe LED < and left shoe LED < (only when wrist strap test is not working)
- Close the resistance module for shoes , and press shortly on taste H button
- When value is OK , green LED flashes (+ sonor signal) during 1 second, and Right shoe LED > and left shoe LED >
- Push quickly again on taste H button
- The new tolerances are now entered.
- Push the control plate , tester is now ready for use.

11.2 Calibration procedure

Calibration of the tester is made with calibration kits. (ref 61-200-0101 et 0102).
These kits are supplied with a certicate of calibration.

Recommended periodicity for calibration : 1 per year
When calibration or set up of the limits, one value is outside of tolerances , the 6 red LEDS flash and the tester switches off automatically.

ATTENTION ! you must then re-start the calibration process for lower and upper limits !!!

For information, manufacturer tolerances are calculated for different resistance value acceptance

Low limit : 0 . . . . . 2 MΩ High limit : 2 . . . . . 200 MΩ

USING INSTRUCTIONS

Wrist strap and shoe tester WST 100

Stand on the applied shoe electrode (2 feet)
Connect the wrist strap
Push the test plate and keep it pressed

Wait till result is displayed :

Green LED o.k . ➔ Wrist strap and shoes ok Vibror = 1 long time

You can enter in the protected ESD area

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1 red LED > ➔ Wrist strap and if applicable for shoes, too high resistance

1 red LED < ➔ Wrist strap and if applicable for shoes , too low resistance

Do not enter in the protected ESD area